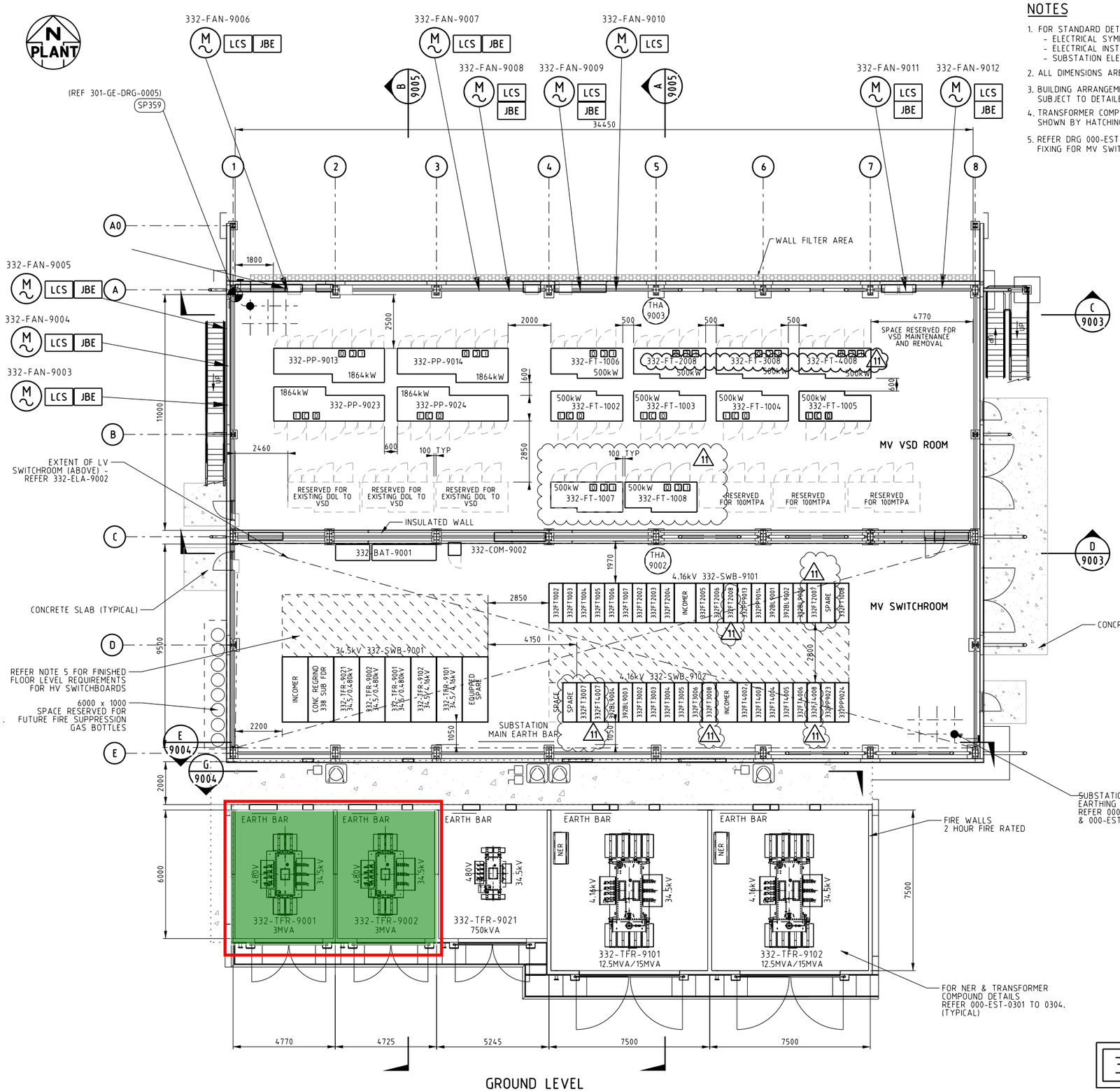

NOTES

1. FOR STANDARD DETAILS REFER TO THE FOLLOWING:
   - ELECTRICAL SYMBOLS: 000-EST-0001 TO 0004.
   - ELECTRICAL INSTALLATION DETAILS: 000-EST-0006 TO 000-EST-0081.
   - SUBSTATION ELECTRICAL DESIGN DETAILS: 000-EST-0301 TO 000-EST-0306.
2. ALL DIMENSIONS ARE MINIMUM INTERNAL BETWEEN INTERNAL FACE OF COLUMNS.
3. BUILDING ARRANGEMENT SHOWN IS INDICATIVE ONLY. ACTUAL ARRANGEMENT WILL BE SUBJECT TO DETAILED STRUCTURAL STEEL AND CONCRETE DESIGN REQUIREMENTS.
4. TRANSFORMER COMPOUND AND FIRE WALLS SHALL BE 2 HOUR FIRE RATED WHERE SHOWN BY HATCHING.
5. REFER DRG 000-EST-0304 FOR FINISHED FLOOR LEVEL REQUIREMENTS & C-CHANNEL FIXING FOR MV SWITCHGEAR.
6. CABLE LADDER LOADING - 130kg/m PER LADDER. REFER ELEVATION FOR PRELIMINARY QUANTITY.
7. CABLE LADDER & DUCTING HANGERS TO BE SITE SUPPLIED AND INSTALLED.
8. CABLE LADDER WALL PENETRATIONS WILL BE POSITIONED TO SUIT COLUMN LOCATIONS.
9. FLOOR LOADING FOR UPPER LEVEL TO BE 1000kg/m2.
10. FUTURE ALLOWANCE FOR AIR CONDITIONING DUCT LOADING IN MV VSD ROOM - 50kg/m.

Subsystem 051-E-004

332-SUB-9001

2m 0m 2m 4m 6m 8m 10m
SCALE 1:100

REVISIONS												
REV	DESCRIPTION	DRN	CHK	ENG	DATE	REV	DESCRIPTION	DRN	CHK	ENG	DATE
11	REVISED AS NOTED	JB	KR	JM	04.04.18	7	XFMR BAY WALL LOCATION REVISED. COLUMN 2 REVISED & FANS ADDED.	KH	KR	AD	20.06.17
10	MV VSD ROOM FAN JBE'S ADDED	KH	KR	JM	01.03.18	6	MV VSD ROOM LAYOUT REVISED VSD FILTER & FIRE GAS BOTTLES ADDED	KH	KR	AD	03.02.17
9	REVISED TO 1824-300-ME-LST-0002/U	KH	KR	JT	30.11.17	5	FUTURE AREA REVISED FOR MV VSD ROOF VENTILATION. TOP FLOOR EXTENDED.	KH	KR	AD	30.09.16
8	SWITCHBOARD LAYOUT REVISED TO LATEST VENDOR DETAILS	KH	KR	AD	09.10.17	4	REVISED AS NOTED	KH	KR	AD	29.07.16

REFERENCE DRAWINGS	
DRAWING No.	DESCRIPTION
332-ELA-9001/12	SUBSTATION ELECTRICAL LAYOUTS
000-EST-0301/4	SUBSTATION ELECTRICAL DESIGN DETAILS LAYOUTS SHT1/4

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DRAWN	K REDWOOD	09.09.14
CHECKED	G DINGLEY	21.10.14
DISCIPLINE ENGINEER	G DINGLEY	21.10.14
PRINCIPAL ENGINEER	A DINGLEY	20.02.15
CLIENT		

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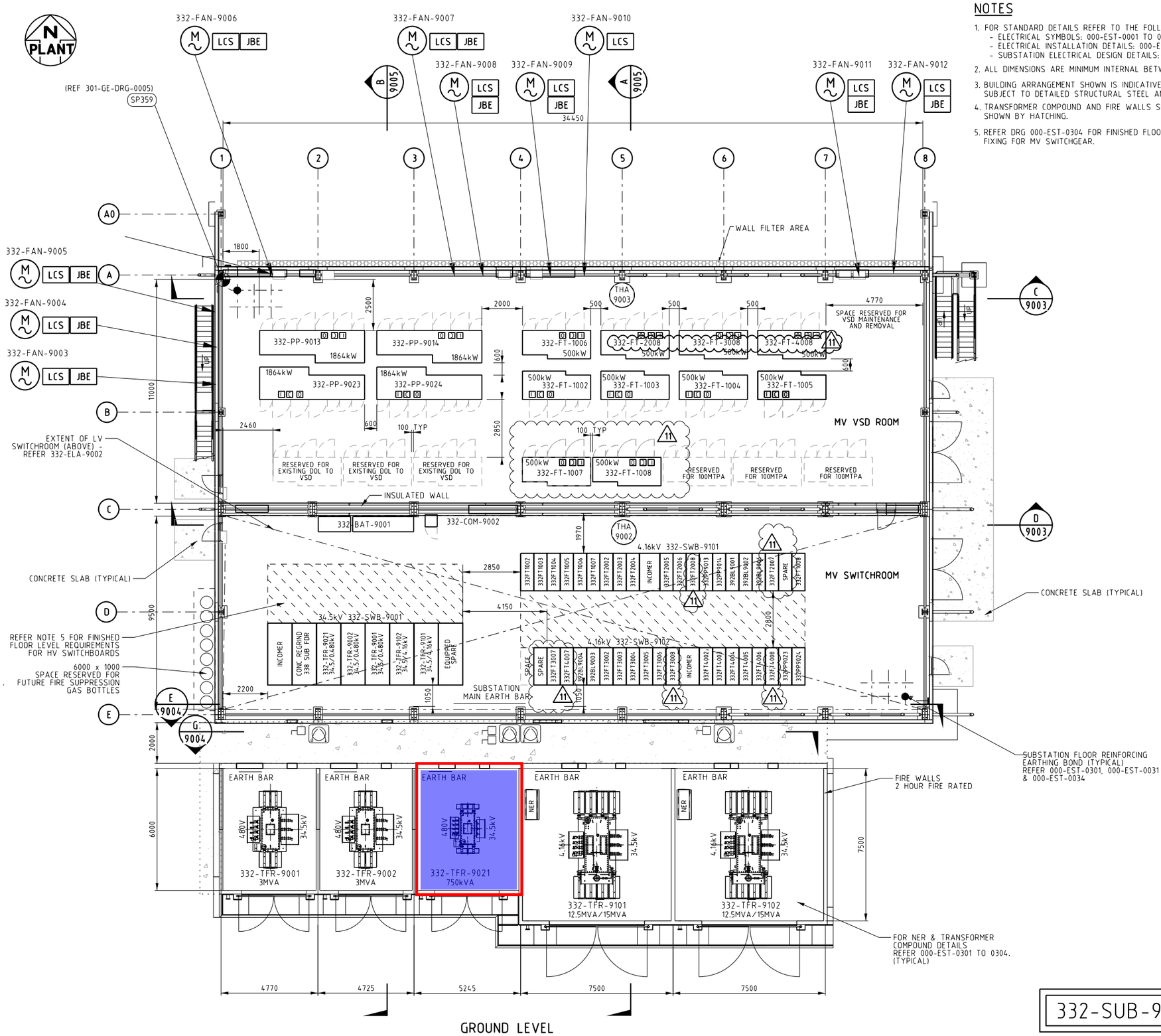
MINA DE COBRE PANAMA
TREATMENT PLANT
ROUGHER FLOTATION SUBSTATION
ELECTRICAL LAYOUT SHT 1

CLIENT: MINERA PANAMA S.A.

SCALE		DRG. No.	CLIENT PROJECT NUMBER	REV. No.
1:100	A1	332-ELA-9001	1824	11

J:\Projects\Clk43 Mina de Cobre Project (1824)\02. Drafting\ELA Layouts\300\332\332-ELA-9001.dgn 4/04/2018 10:35:02 AM jemma.bell



NOTES

1. FOR STANDARD DETAILS REFER TO THE FOLLOWING:
   - ELECTRICAL SYMBOLS: 000-EST-0001 TO 0004.
   - ELECTRICAL INSTALLATION DETAILS: 000-EST-0006 TO 000-EST-0081.
   - SUBSTATION ELECTRICAL DESIGN DETAILS: 000-EST-0301 TO 000-EST-0306.
2. ALL DIMENSIONS ARE MINIMUM INTERNAL BETWEEN INTERNAL FACE OF COLUMNS.
3. BUILDING ARRANGEMENT SHOWN IS INDICATIVE ONLY. ACTUAL ARRANGEMENT WILL BE SUBJECT TO DETAILED STRUCTURAL STEEL AND CONCRETE DESIGN REQUIREMENTS.
4. TRANSFORMER COMPOUND AND FIRE WALLS SHALL BE 2 HOUR FIRE RATED WHERE SHOWN BY HATCHING.
5. REFER DRG 000-EST-0304 FOR FINISHED FLOOR LEVEL REQUIREMENTS & C-CHANNEL FIXING FOR MV SWITCHGEAR.
6. CABLE LADDER LOADING - 130kg/m PER LADDER. REFER ELEVATION FOR PRELIMINARY QUANTITY.
7. CABLE LADDER & DUCTING HANGERS TO BE SITE SUPPLIED AND INSTALLED.
8. CABLE LADDER WALL PENETRATIONS WILL BE POSITIONED TO SUIT COLUMN LOCATIONS.
9. FLOOR LOADING FOR UPPER LEVEL TO BE 1000kg/m2.
10. FUTURE ALLOWANCE FOR AIR CONDITIONING DUCT LOADING IN MV VSD ROOM - 50kg/m.

Subsystem 051-E-005

332-SUB-9001

2m 0m 2m 4m 6m 8m 10m
SCALE 1:100

REVISIONS												
REV	DESCRIPTION	DRN	CHK	ENG	DATE	REV	DESCRIPTION	DRN	CHK	ENG	DATE
11	REVISED AS NOTED	JB	KR	JM	04.04.18	7	XFMR BAY WALL LOCATION REVISED. COLUMN 2 REVISED & FANS ADDED.	KH	KR	AD	20.06.17
10	MV VSD ROOM FAN JBE'S ADDED	KH	KR	JM	01.03.18	6	MV VSD ROOM LAYOUT REVISED VSD FILTER & FIRE GAS BOTTLES ADDED	KH	KR	AD	03.02.17
9	REVISED TO 1824-300-ME-LST-0002/U	KH	KR	JT	30.11.17	5	FUTURE AREA REVISED FOR MV VSD ROOF VENTILATION. TOP FLOOR EXTENDED.	KH	KR	AD	30.09.16
8	SWITCHBOARD LAYOUT REVISED TO LATEST VENDOR DETAILS	KH	KR	AD	09.10.17	4	REVISED AS NOTED	KH	KR	AD	29.07.16

REFERENCE DRAWINGS	
DRAWING No.	DESCRIPTION
332-ELA-9001/12	SUBSTATION ELECTRICAL LAYOUTS
000-EST-0301/4	SUBSTATION ELECTRICAL DESIGN DETAILS LAYOUTS SHT1/4

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DRAWN	K REDWOOD	09.09.14
CHECKED	G DINGLEY	21.10.14
DISCIPLINE ENGINEER	G DINGLEY	21.10.14
PRINCIPAL ENGINEER	A DINGLEY	20.02.15
CLIENT		

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MINA DE COBRE PANAMA
TREATMENT PLANT
ROUGHER FLOTATION SUBSTATION
ELECTRICAL LAYOUT SHT 1

CLIENT: MINERA PANAMA S.A.

SCALE		DRG. No.	CLIENT PROJECT NUMBER	REV. No.
1:100	A1	332-ELA-9001	1824	11

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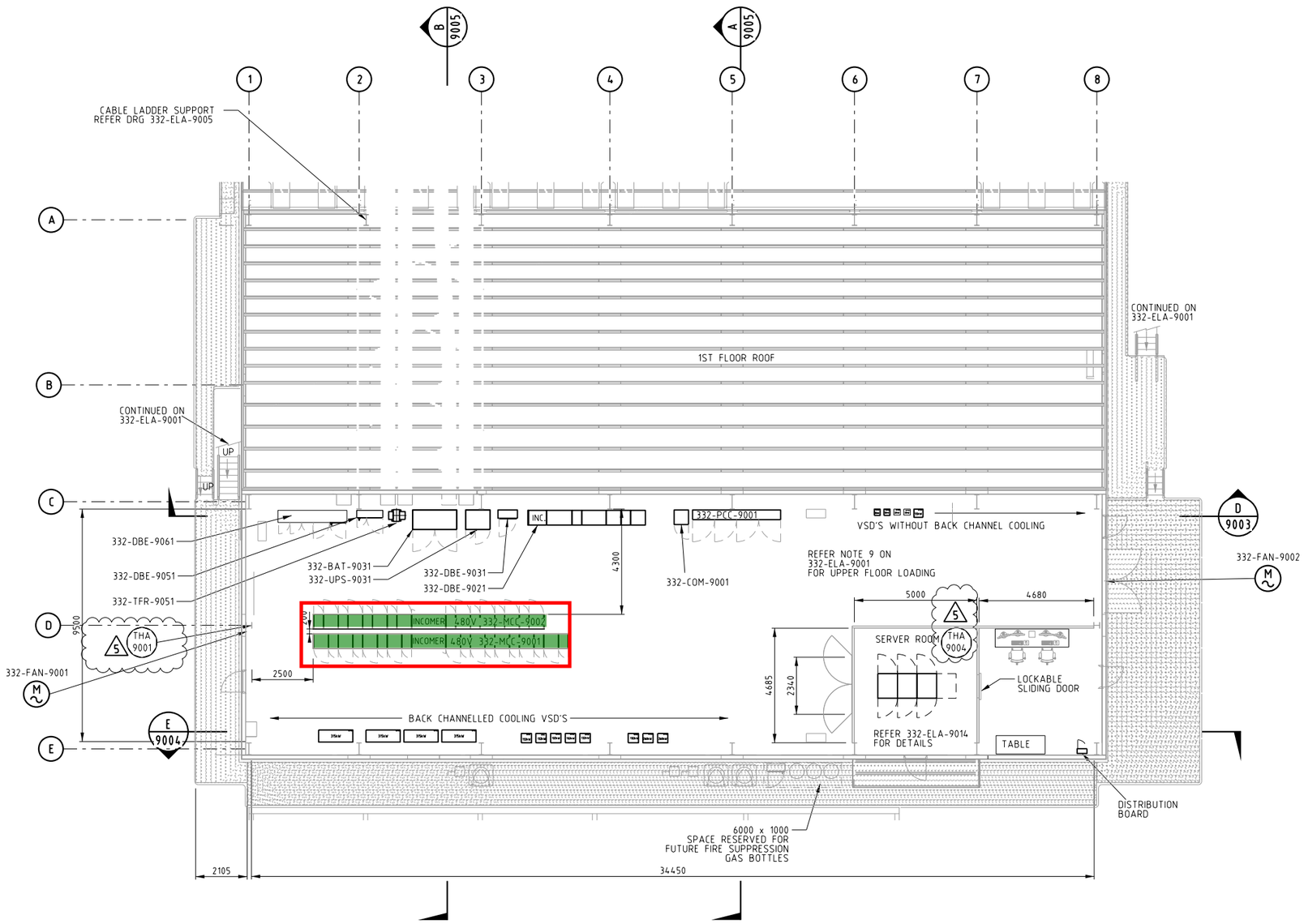
N
PLANT



UPPER LEVEL

Subsystem
051-E-004

NOTES

1. REFER 332-ELA-9001 FOR GENERAL NOTES.

2m 0m 2m 4m 6m 8m 10m

SCALE 1:100

J:\Projects\1144 Mina de Cobre Project 1824\02. Drafting\ELA Layouts\300\332\332-ELA-9002.dgn 9/10/2017 3:32:19 PM KimHarris

REVISIONS												
REV	DESCRIPTION	DRN	CHK	ENG	DATE	REV	DESCRIPTION	DRN	CHK	ENG	DATE
3	VSD & DOOR LOCATIONS REVISED BUILDING COLUMN DETAILS ADDED	KH	KR	AD	03.02.17						
2	EQUIPMENT LOCATIONS REVISED. VSD'S VENTILATED TO OUTSIDE WALL	KH	KR	AD	30.09.16						
1	REVISED AS NOTED	KH	KR	AD	29.07.16	5	TEMPERATURE/HUMIDITY ANALYSER ADDED	KH	KR	AD	09.10.17
0	ISSUED FOR ARCHITECTURAL DESIGN	KH	AS	GD	27.05.16	4	LV ROOM FANS ADDED. 332-COM-9001 LOCATION REVISED. 332-COM-9003 DELETED	KH	KR	AD	20.06.17

REFERENCE DRAWINGS	
DRAWING No.	DESCRIPTION
332-ELA-9001/12	SUBSTATION ELECTRICAL LAYOUTS
000-EST-0301/3	SUBSTATION ELECTRICAL DESIGN DETAILS LAYOUTS SHT1/4

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DRAWN	K HARRIS	27.05.16
CHECKED	A STEINOCHR	27.05.16
DISCIPLINE ENGINEER	G DINGLEY	27.05.16
PRINCIPAL ENGINEER	A DINGLEY	27.05.16
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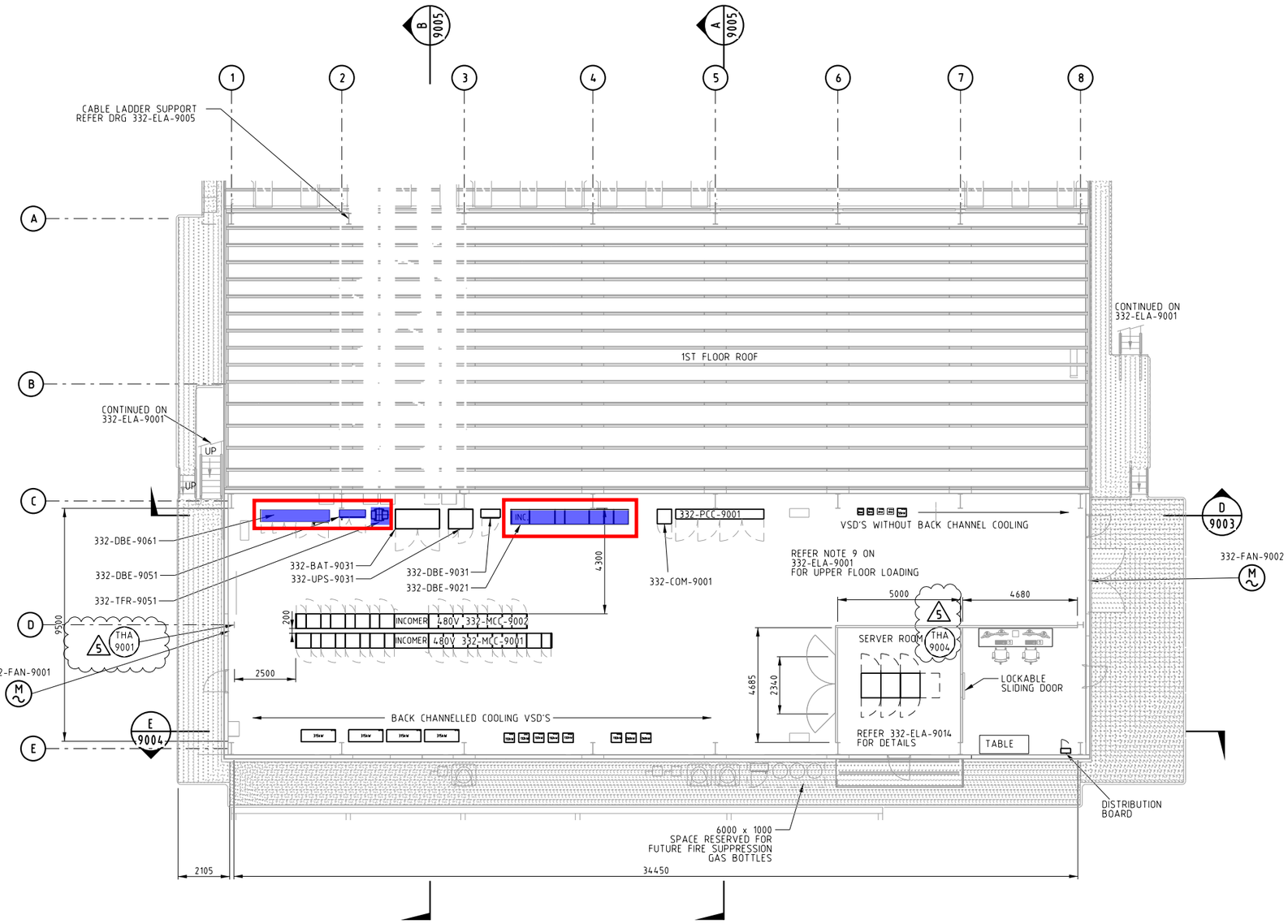
MINA DE COBRE PANAMA
TREATMENT PLANT
ROUGHER FLOTATION SUBSTATION
ELECTRICAL LAYOUT SHT 2

CLIENT: MINERA PANAMA S.A.

SCALE		DRG. No.	CLIENT PROJECT NUMBER	REV. No.
1:100	A1	332-ELA-9002	1824	5

N
PLANT



UPPER LEVEL

Subsystem 051-E-005

NOTES

1. REFER 332-ELA-9001 FOR GENERAL NOTES.

2m 0m 2m 4m 6m 8m 10m

SCALE 1:100

J:\Projects\C1443 Mina de Cobre Project 1824\102 Drafting\ELA Layout\300\332\332-ELA-9002.dgn 9/10/2017 3:32:13 PM KimHarris

REVISIONS

REV	DESCRIPTION	DRN	CHK	ENG	DATE
3	VSD & DOOR LOCATIONS REVISED BUILDING COLUMN DETAILS ADDED	KH	KR	AD	03.02.17
2	EQUIPMENT LOCATIONS REVISED. VSD'S VENTILATED TO OUTSIDE WALL	KH	KR	AD	30.09.16
1	REVISED AS NOTED	KH	KR	AD	29.07.16
0	ISSUED FOR ARCHITECTURAL DESIGN	KH	AS	GD	27.05.16

REV	DESCRIPTION	DRN	CHK	ENG	DATE
5	TEMPERATURE/HUMIDITY ANALYSER ADDED	KH	KR	AD	09.10.17
4	LV ROOM FANS ADDED. 332-COM-9001 LOCATION REVISED. 332-COM-9003 DELETED	KH	KR	AD	20.06.17

REFERENCE DRAWINGS

DRAWING No.	DESCRIPTION
332-ELA-9001/12	SUBSTATION ELECTRICAL LAYOUTS
000-EST-0301/3	SUBSTATION ELECTRICAL DESIGN DETAILS LAYOUTS SHT1/4

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DRAWN	K HARRIS	27.05.16
CHECKED	A STEINOCHR	27.05.16
DISCIPLINE ENGINEER	G DINGLEY	27.05.16
PRINCIPAL ENGINEER	A DINGLEY	27.05.16
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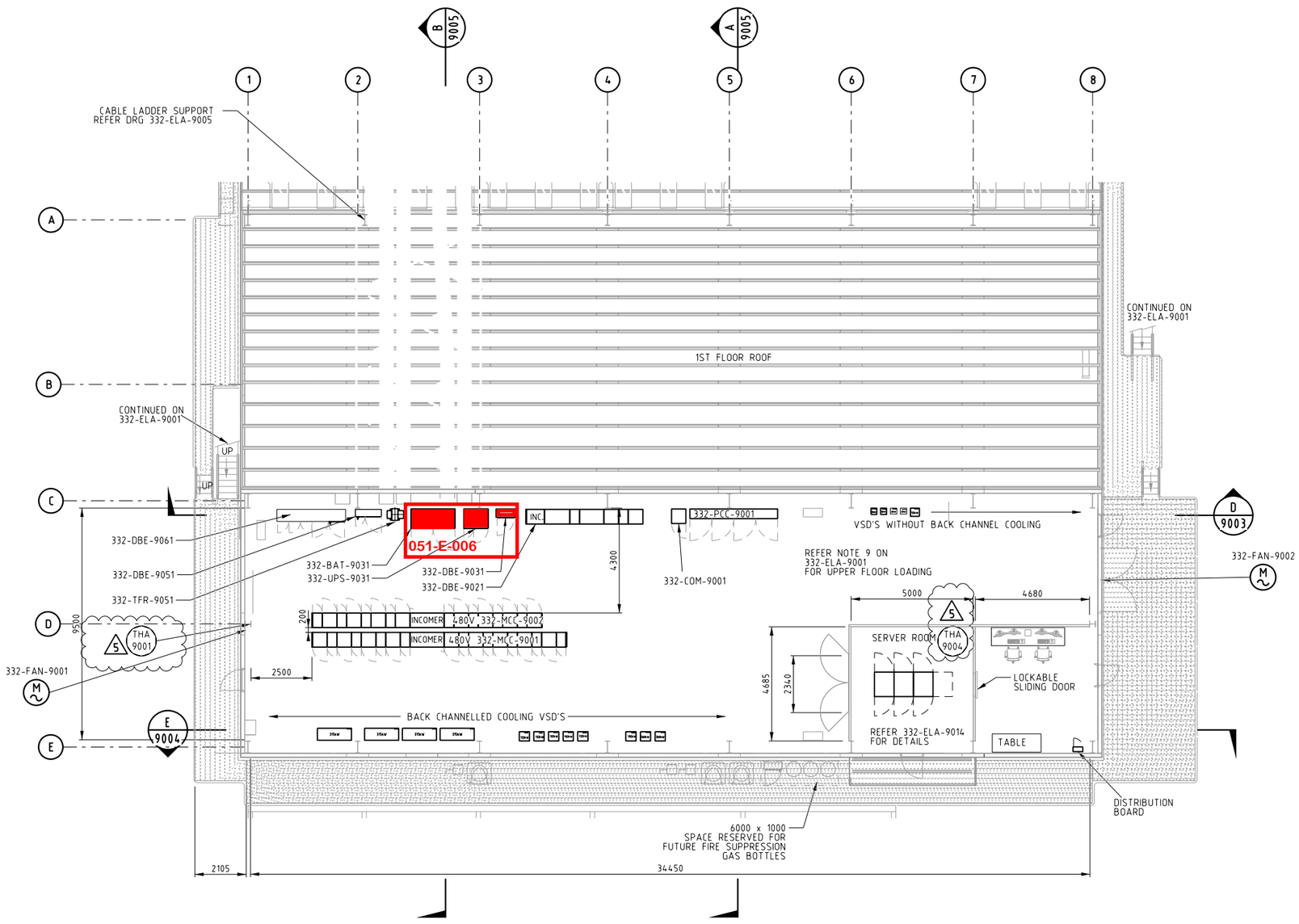
MINA DE COBRE PANAMA
TREATMENT PLANT
ROUGHER FLOTATION SUBSTATION
ELECTRICAL LAYOUT SHT 2

CLIENT: MINERA PANAMA S.A.

SCALE		DRG. No.	CLIENT PROJECT NUMBER	REV. No.
1:100	A1	332-ELA-9002	1824	5

N
PLANT



UPPER LEVEL

Subsystem 051-E-006

NOTES

1. REFER 332-ELA-9001 FOR GENERAL NOTES.

2m 0m 2m 4m 6m 8m 10m

SCALE 1:100

J:\Projects\C1443 Mina de Cobre Project 1824\102 Drafting\ELA Layouts\300\332\332-ELA-9002.dgn 9/10/2017 3:23:13 PM KimHarris

REVISIONS												
REV	DESCRIPTION	DRN	CHK	ENG	DATE	REV	DESCRIPTION	DRN	CHK	ENG	DATE
3	VSD & DOOR LOCATIONS REVISED BUILDING COLUMN DETAILS ADDED	KH	KR	AD	03.02.17						
2	EQUIPMENT LOCATIONS REVISED. VSD'S VENTILATED TO OUTSIDE WALL	KH	KR	AD	30.09.16						
1	REVISED AS NOTED	KH	KR	AD	29.07.16	5	TEMPERATURE/HUMIDITY ANALYSER ADDED	KH	KR	AD	09.10.17
0	ISSUED FOR ARCHITECTURAL DESIGN	KH	AS	GD	27.05.16	4	LV ROOM FANS ADDED. 332-COM-9001 LOCATION REVISED. 332-COM-9003 DELETED	KH	KR	AD	20.06.17

REFERENCE DRAWINGS	
DRAWING No.	DESCRIPTION
332-ELA-9001/12	SUBSTATION ELECTRICAL LAYOUTS
000-EST-0301/3	SUBSTATION ELECTRICAL DESIGN DETAILS LAYOUTS SHT1/4

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DRAWN	K HARRIS	27.05.16
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DISCIPLINE ENGINEER	G DINGLEY	27.05.16
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MINA DE COBRE PANAMA
TREATMENT PLANT
ROUGHER FLOTATION SUBSTATION
ELECTRICAL LAYOUT SHT 2

CLIENT: MINERA PANAMA S.A.

SCALE		DRG. No.	CLIENT PROJECT NUMBER	REV. No.
1:100	A1	332-ELA-9002	1824	5